

MEMORANDUM OF UNDERSTANDING  
BETWEEN  
THE U.S. GEOLOGICAL SURVEY  
AND  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
FOR  
EXPERIMENTAL LAND REMOTELY SENSED DATA PROCESSING,  
DISTRIBUTION, ARCHIVING, AND RELATED SCIENCE SUPPORT

This Memorandum of Understanding is made and entered into this 16th day of March, 1988, by and between the U.S. Geological Survey, hereinafter referred to as the USGS, and the National Aeronautics and Space Administration, hereinafter referred to as NASA.

Whereas, NASA is responsible for the conduct of an ongoing research and development program leading to advanced capabilities for observation of the Earth from space; and

Whereas, NASA is planning the development and operation of advanced experimental earth observation systems, such as the Earth Observing System (EOS) to be flown in conjunction with the Earth Orbiting Space Station; and

Whereas, NASA is seeking the active long-term maintenance and wide distribution of land remotely sensed research and development data from current and future experimental Earth observation systems to the research and development community in the most efficient and cost-effective manner; and

Whereas, the USGS is one of the principal land earth sciences organizations of the Federal Government; and

Whereas, the USGS operates the EROS Data Center as the principal U.S. processing, distribution, and archive location for U.S. satellite land remotely sensed data; and

Whereas, the USGS' EROS Data Center combines multidisciplinary earth science research, digital data processing and analysis system development and operation, and data distribution and archiving capabilities; and

Whereas, the parties hereto are mutually interested in and desire to cooperate in the development and operation of experimental land remotely sensed data processing, distribution, and archiving capabilities, along with appropriate related science support; and

Whereas, the USGS is authorized to cooperate with NASA in accomplishing this work pursuant to the Organic Act of the U.S. Geological Survey of March 3, 1879 (43 U.S.C. 31) and NASA is authorized to cooperate with the USGS in the accomplishment of this work pursuant to Section 203(c)(5) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473(c)(5)).

Now therefore,

NASA agrees to:

1. Place the active short- and long-term archives for experimental land remotely sensed data obtained by NASA at the EROS Data Center. This will include a large amount of the processing, distribution, and archiving of data from the EOS program and other current and future experimental systems as agreed to.
2. Include as appropriate, USGS representatives in the planning, development, and implementation activities for experimental earth observation systems including the EOS Data and Information System at the earliest practical time.
3. Provide funding for the development, implementation, and operation of the active short-term archives and appropriate science support activities for the experimental land remotely sensed data from the EOS program and other current and future experimental systems as agreed to.
4. Transfer responsibility for active long-term archiving and appropriate science support activities for these data archives to the USGS at agreed upon future dates in accordance with approved coordinated program definition and implementation plans.

USGS agrees to:

1. Have the EROS Data Center serve as the active short- and long-term archive for experimental land remotely sensed data obtained by NASA, including a large amount of the processing, distribution, and archiving of data from the EOS program and other current and future experimental systems as agreed to and in accordance with existing policies and applicable laws.
2. Participate with NASA in the planning, development, and implementation activities for experimental earth observation systems including the EOS Data and Information System.
3. Assume responsibility at a future agreed upon time for active long-term archiving and appropriate science support activities for those NASA experimental land remotely sensed data in the active short-term archives in accordance with approved coordinated program definition and implementation plans.

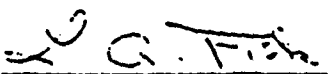
NASA and USGS agree jointly to:

1. Define the scope and content of the active short- and long-term land remotely sensed data archives and associated science support activities covered by this agreement.
2. Prepare within 6 months following signature of this agreement an initial Program Definition and Implementation plan. The plan will identify and describe the scope of the major elements covered by this agreement, including estimated funding requirements by each agency, and implementation schedules.


3. Define a budget strategy for the cooperative program which identifies the important complementary roles in earth system science of NASA's EOS and other experimental earth observation systems, and the active long-term land remotely sensed data archive supported by the USGS.
4. Participate in joint presentations to NASA, DOI, OMB, and the Congress, as necessary, to explain the essential roles of each organization and funding needs for the elements of the cooperative program.
5. Designate policy and technical points of contacts in each agency for implementation of this agreement.
6. Establish and execute a plan that provides for NASA funding for development and implementation of the active short-term land remotely sensed data archives and appropriate science support activities at the EROS Data Center and for the transfer of responsibility for the active long-term archives and appropriate science support activities for these data to USGS at agreed upon future dates.

Performance of either party under this agreement is subject to the availability of appropriated funds.

This agreement shall remain in effect until cancelled. The agreement may be modified by mutual agreement of the parties and may be terminated by either party upon 90 days written notice.

  
Associate Administrator for  
Space Science and Applications,  
National Aeronautics and Space  
Administration

Date: 3/14/88

  
Director,  
U.S. Geological Survey

Date: 3/16/88

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CLARIFICATION NO. 1

The purpose of this clarification to the NASA/USGS MOU for Experimental Land Remotely Sensed Data Processing, Distribution, Archiving, and Related Science Support dated March 16, 1988, is to document recent agreements regarding USGS involvement with EOS land data.

ITEM No. 1    Concerning USGS involvement with EOS land data

The USGS will participate in EOS land data processing, archiving, and distribution accomplished by the EOS Data and Information System (EOSDIS). The short- and long-term active archive elements of EOSDIS for EOS land data will be located at the USGS EROS Data Center (EDC). This will include Central Data Handling Facility (CDHF) capabilities to create the different levels of EOS data required for research purposes and Data Archive and Distribution System (DADS) capabilities to provide EOS data storage, retrieval and distribution.

Specific EOS data types and CDHF and DADS functions currently planned for EDC include:

- Create level 1 and higher order standard HIRIS data products.
- Create level 0 and higher order standard SAR land data products. (Level 0 processing may be done elsewhere pending results of CDOS and EOSDIS phase B trade-off studies.)
- Special HIRIS and SAR (land) data products may also be created at EDC pending results of HIRIS and SAR Team and EOS project trade-off studies.
- Archive and distribute level 2 and higher order land MODIS data products. (Role of EDC in Level 1 land MODIS data processing and distribution is subject to further review and study.)
- Process, archive, and distribute Japanese ITIR data if required by EOS investigators and if cost studies support this alternative over data distribution from Japan.

- Archive and distribute all land data processed by EDC.
- Archive and distribute special land data products created by researchers using EOS data produced by EDC.
- Provide data and cataloging information to the EOSDIS Information Management Center (IMC).

ITEM No. 2      Concerning USGS participation in EOSDIS planning and implementation

The USGS will be included in EOSDIS planning, development and implementation as required to assure that EOS requirements will be met by the EOSDIS functions performed at EDC and that the stipulations of the NASA/USGS MOU are met. This will include as a minimum, USGS participation in requirements reviews, phase B study activities, and EOSDIS phase C/D specification, procurement, development and implementation.

ITEM No. 3      Concerning funding for required facility modification and construction at EDC to support EOSDIS CDHF and DADS operations

It is impractical to plan on either organization obtaining capital appropriations for Construction of Facilities at EDC. Following approval of the NASA EOS new start, completion of the EOSDIS Phase B design studies, and finalization of the requirements for USGS CDHF and DADS support, the USGS will arrange for construction of needed facilities on a lease purchase basis, in accordance with EOS Launch Schedules, and with the lease payments being provided as overhead on operations cost over the life of the EOS project.

ITEM No. 4      Concerning responsibility for providing operations personnel for EDC EOSDIS CDHF and DADS operations

Following EOSDIS hardware and software development, installation, checkout, and test by NASA contractors the USGS will be responsible for on-site management, operation, and maintenance of all EOSDIS CDHF and DADS equipment and activities. NASA EOSDIS contractors will continue to provide certain field

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engineering support for EOSDIS equipment and NASA will provide for project-wide software development and maintenance support. In carrying out EOSDIS operations activities, the USGS will be responsive to NASA EOSDIS project direction.

- ITEM No. 5      Concerning responsibility for funding EOSDIS operations and support activities at EDC

NASA will be responsible for funding all EOSDIS CDHF operations for the lifetime of the project. Funding for DADS operations will transition from full NASA funding during the first two years of the project to full USGS funding following project completion. Funding responsibility for the DADS will be based on NASA funding for short-term archive operations and USGS funding for long-term archive operations. This will result in approximately linear growth in USGS funding requirements for the DADS over the life of the EOS mission.

- ITEM No. 6      Concerning the time of transition of EOSDIS data from the "short-term archive" to the "long-term archive"

EOSDIS data (and funding responsibility) will transition from "short-term archive" designation to "long-term archive" designation three years following data acquisition. It is envisioned that data will not change physical location and DADS capability will be common for both short- and long-term archive operations.

- ITEM No. 7      Concerning definition, responsibilities, and funding of "related science support" as referred to in the MOU

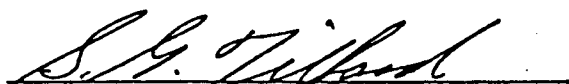
The USGS will be responsible for providing and funding the basic resident facility science support needed to influence and assist activities associated with EOSDIS operations. NASA will fund for unique EOSDIS "customer services" science and technical support.

- ITEM No. 8      Concerning the EOS Non-Advocacy Review (NAR)

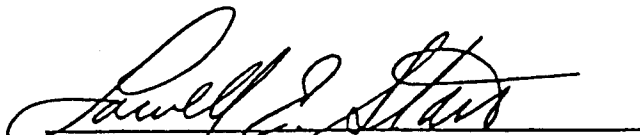
NASA will present total EOSDIS estimated costs (including USGS-related) at the NAR. The USGS will be present to support cost estimates and discussions related to USGS EOSDIS activities.

ITEM No. 9      Concerning identification of USGS costs and funding requirements for support of the EOS project

All parties agree to fully support the identification of all project costs (to OMB and others) including those that will be the responsibility of the USGS before, during, and after the EOS project.

  
S.G. Tilford, Director  
Earth Science and  
Applications Division  
NASA

Date: 9/19/89

  
L. E. Starr, Chief  
National Mapping Division  
USGS

Date: 9/17/89